



Mr. Steve Trent  
Fluor Hanford Inc.  
825 Jadwin Ave.  
Richland, WA 99352

**Subject: Contract No. 630  
Analytical Data Package**

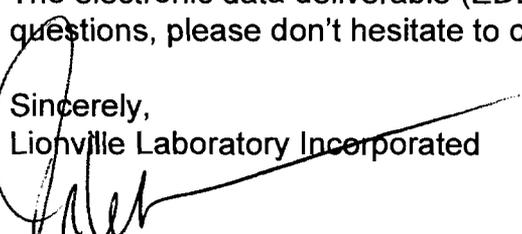
Dear Mr. Trent:

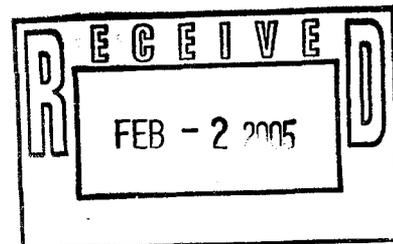
Enclosed are the hard copy analytical reports for the batch number/fraction indicated (marked X) in the following table:

LvLI Batch #	0412L478
SDG #	H2915
SAF #	F03-006
Date Received	12-18-05
# Samples	1
Matrix	Soil
Volatiles	
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
Herbicides	
GC Alcohol	
Metals	
Inorganics	X

The electronic data deliverable (EDD) will be emailed shortly. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,  
Lionville Laboratory Incorporated

  
Orlette S. Johnson  
Project Manager



Lionville Laboratory, Inc.  
 INORGANIC ANALYTICAL DATA PACKAGE FOR  
 TNUHANFORD F03-006 H2915

DATE RECEIVED: 12/18/04

LVL LOT # :0412L478

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
B1B5F4						
% SOLIDS	001	S	04L%S206	12/15/04	12/27/04	12/28/04
% SOLIDS	001 REP	S	04L%S206	12/15/04	12/27/04	12/28/04
CHROMIUM VI	001	S	04LVI047	12/15/04	12/27/04	12/27/04
CHROMIUM VI	001 REP	S	04LVI047	12/15/04	12/27/04	12/27/04
CHROMIUM VI	001 MS	S	04LVI047	12/15/04	12/27/04	12/27/04
CHROMIUM VI	001 MSD	S	04LVI047	12/15/04	12/27/04	12/27/04
NITRATE NITRITE	001	S	05LN3003	12/15/04	01/14/05	01/15/05
NITRATE NITRITE	001 REP	S	05LN3003	12/15/04	01/14/05	01/15/05
NITRATE NITRITE	001 MS	S	05LN3003	12/15/04	01/14/05	01/15/05
OIL & GREASE BY GRAV	001	S	04LOG045	12/15/04	12/23/04	12/23/04
OIL AND GREASE BY GR	001 REP	S	04LOG047	12/15/04	12/30/04	12/31/04
OIL AND GREASE BY GR	001 MS	S	04LOG047	12/15/04	12/30/04	12/31/04

LAB QC:

CHROMIUM VI	MB1	S	04LVI047	N/A	12/27/04	12/27/04
CHROMIUM VI	MB1 BS	S	04LVI047	N/A	12/27/04	12/27/04
CHROMIUM VI	MB1 BSD	S	04LVI047	N/A	12/27/04	12/27/04
NITRATE NITRITE	MB1	S	05LN3003	N/A	01/14/05	01/15/05
NITRATE NITRITE	MB1 BS	S	05LN3003	N/A	01/14/05	01/15/05
OIL & GREASE BY GRAV	MB1	S	04LOG045	N/A	12/23/04	12/23/04
OIL AND GREASE BY GR	MB1 BS	S	04LOG045	N/A	12/23/04	12/23/04
OIL AND GREASE BY GR	MB1 BSD	S	04LOG045	N/A	12/23/04	12/23/04
OIL & GREASE BY GRAV	MB1	S	04LOG047	N/A	12/30/04	12/31/04
OIL AND GREASE BY GR	MB1 BS	S	04LOG047	N/A	12/30/04	12/31/04
OIL AND GREASE BY GR	MB1 BSD	S	04LOG047	N/A	12/30/04	12/31/04



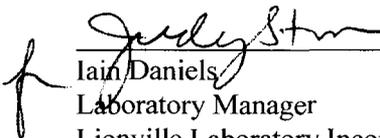
## Analytical Report

**Client:** TNU-HANFORD F03-006 H2915  
**LVL#:** 0412L478

**W.O.#:** 11343-606-001-9999-00  
**Date Received:** 12-18-04

### INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 soil sample.
2. The sample was prepared and analyzed in accordance with the methods indicated on the attached glossary.
3. Sample holding times as required by the method and/or contract were met.
4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy.
5. The method blanks were within the method criteria.
6. The Laboratory Control Samples (LCS) were within the laboratory control limits.
7. The matrix spike recoveries for Chromium VI, Nitrate Nitrite and Oil and Grease were within the 75-125% control limits.
8. The replicate analyses Chromium VI, Nitrate Nitrite and Oil and Grease were within the 20% RPD control limit.
9. Results for solid samples are reported on a dry weight basis.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard copy package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

  
Iain Daniels  
Laboratory Manager  
Lionville Laboratory Incorporated  
njpvi12-478

1/21/05  
Date

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

**Lionville Laboratory Incorporated**

**WET CHEMISTRY**

**METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS**

	<u>ASTM</u>	<u>SW846</u>	<u>OTHER</u>
% Ash	___ D2216-80		
% Moisture	___ D2216-80		___ ILMO4.0 (e)
% Solids	✓ D2216-80		___ ILMO4.0 (e)
% Volatile Solids	___ D2216-80		
ASTM Extraction in Water	___ D3987-81/85		
BTU	___ D240-87		
CEC		___ 9081	___ c
Chromium VI		✓ 3060A/7196A	
Corrosivity ___ by coupon ___ by pH		___ 1110(mod) ___ 9045C	
Cyanide, Total		___ 9010B	___ ILMO4.0 (e)
Cyanide, Reactive		___ Section 7.3/9014	
Halides, Extractable Organic		___ 9020B	___ EPA 600/4/84-008
Halides, Total		___ 9020B	___ EPA 600/4/84-008
EP Toxicity		___ 1310A	
Flash Point		___ 1010	
Ignitability		___ 1010	
Oil & Grease		✓ 9071A(mod.)	✓ EPA 413.1(mod.)
Carbon, Total Organic		___ 9060	___ Lloyd Kahn (mod)
Oxygen Bomb Prep for Anions	___ D240-87(mod)	___ 5050	
Petroleum Hydrocarbons, Total Recoverable		___ 9071	___ EPA 418.1
pH, Soil		___ 9045C	
Sulfide, Reactive		___ Section 7.3/9030B	
Sulfide		___ 9030B(mod)	
Specific Gravity	___ D1429-76C/	___ D5057-90	
Sulfur, Total		___ 9056	
Synthetic Preparation Leach		___ 1312	
Paint Filter		___ 9095A	
<b>Other:</b> <i>nitrate nitrite</i>		<b>Method:</b> <i>EPA 353.2(mod.)</i>	
<b>Other:</b>		<b>Method</b>	

## Lionville Laboratory Incorporated

### METHOD REFERENCES AND DATA QUALIFIERS

#### DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- \* = Indicates that the original sample result is greater than 4x the spike amount added.

#### ABBREVIATIONS

- MB = Method or Preparation Blank.  
MS = Matrix Spike.  
MSD = Matrix Spike Duplicate.  
REP = Sample Replicate  
LC = Laboratory Control Sample.  
NC = Not calculated.

A suffix of -R, -S, or -T following these codes indicate a replicate, spike or sample duplicate analysis respectively.

#### ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.
2. USEPA Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020).
3. Test Methods for Evaluating Solid Waste (USEPA SW-846).
  - a. Standard Methods for the Examination of Water and Waste, 16 ed, (1983).
  - b. Standard Methods for the Examination of Water and Waste, 17 ed, (1989)/18ed (1992).
  - c. Method of Soil Analysis, Part 1, Physical and Mineralogical Methods, 2nd ed, (1986).
  - d. Method of Soil Analysis, Part 2, Chemical and Microbiological Properties, Am. Soc. Agron., Madison, WI (1965).
  - e. USEPA Contract Laboratory Program, Statement of Work for Inorganic Analysis.
  - f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 01/19/05

CLIENT: TNUHANFORD F03-006 H2915  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L478

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING	DILUTION
					LIMIT	FACTOR
-001	B1B5F4	% Solids	90.6	%	0.01	1.0
		Chromium VI	0.22	u MG/KG	0.22	1.0
		Nitrate Nitrite	0.22	u MG/KG	0.22	1.0
		Oil & Grease Gravimetri	835	u MG/KG	835	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 01/19/05

CLIENT: TNUHANFORD F03-006 H2915  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L478

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
=====	=====	=====	=====	=====	=====	=====
BLANK10	04LVI047-MB1	Chromium VI	0.20	u MG/KG	0.20	1.0
BLANK10	05LN3003-MB1	Nitrate Nitrite	0.20	u MG/KG	0.20	1.0
BLANK10	04LOG045-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0
BLANK10	04LOG047-MB1	Oil & Grease Gravimetri	667	u MG/KG	667	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 01/19/05

CLIENT: TNUHANFORD F03-006 H2915  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L478

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
=====	=====	=====	=====	=====	=====	=====	=====
-001	B1B5F4	Soluble Chromium VI	4.8	0.22u	4.4	107.2	1.0
		Insoluble Chromium VI	1410	0.22u	1240	113.7	100
		Nitrate Nitrite	6.3	0.22u	5.5	113.2	1.0
		Oil & Grease Gravimetr	9070	835 u	9010	100.7	1.0
BLANK10	04LVI047-MB1	Soluble Chromium VI	4.2	0.20u	4.0	105.0	1.0
		Insoluble Chromium VI	1360	0.20u	1230	110.4	100
BLANK10	05LN3003-MB1	Nitrate Nitrite	5.2	0.20u	5.0	104.0	1.0
BLANK10	04LOG045-MB1	Oil & Grease Gravimetr	6910	667 u	6840	101.0	1.0
BLANK10	04LOG047-MB1	Oil & Grease Gravimetr	8300	667 u	8160	101.7	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 01/19/05

CLIENT: TNUHANFORD F03-006 H2915  
 WORK ORDER: 11343-606-001-9999-00

LVL LOT #: 0412L478

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION FACTOR (REP)
			RESULT	REPLICATE	RPD	
-001REP	B1B5F4	% Solids	90.6	91.1	0.58	1.0
		Chromium VI	0.22u	0.22u	NC	1.0
		Nitrate Nitrite	0.22u	0.22u	NC	1.0
		Oil & Grease Gravimetri	835 u	736 u	NC	1.0

0412478

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client <u>TNU Hamford E03-006</u>			Refrigerator #		3																
Est. Final Proj. Sampling Date			#/Type Container	Liquid																	
Project # <u>1343-606-001-9999-00</u>				Solid																	
Project Contact/Phone #			Volume	Liquid	6																
Lionville Laboratory Project Manager <u>Orlotta Johnson</u>				Solid	6																
QC <u>Spec</u> Del <u>Std</u> TAT <u>30 Days</u>			Preservatives																		
Date Rec'd <u>12-18-04</u> Date Due <u>1/17/05</u>			ANALYSES REQUESTED →	ORGANIC			INORG														
				VOA	BNA	Pest/PCB	Herb	Metal	CN												
			↓ Lionville Laboratory Use Only ↓																		
<b>MATRIX CODES:</b> S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)	Matrix	Date Collected	Time Collected															
				MS	MSD																
		001	BIB5F4	✓	✓	S	12-18-04	0900													

Special Instructions:

DATE/REVISIONS:

- \_\_\_\_\_ 1. \_\_\_\_\_
- \_\_\_\_\_ 2. \_\_\_\_\_
- \_\_\_\_\_ 3. \_\_\_\_\_
- \_\_\_\_\_ 4. \_\_\_\_\_
- \_\_\_\_\_ 5. \_\_\_\_\_
- \_\_\_\_\_ 6. \_\_\_\_\_

Relinquished by	Received by	Date	Time
<u>[Signature]</u>	<u>[Signature]</u>	<u>12-18-04</u>	<u>11:15</u>

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
"COMPOSITE WASTE"	ORIGINAL REWRITTEN		

FLUOR Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F03-006-306	PAGE 1 OF 1	
COLLECTOR Pope/Pfister/Wiberg/Tyra		COMPANY CONTACT LC Hulstrom		TELEPHONE NO. 373-3928	PROJECT COORDINATOR TRENT, SJ	PRICE CODE 8N	DATA TURNAROUND 45 Days / 45 Days	
SAMPLING LOCATION <i>QW-12/15/04</i> 200-PW2/216-S-7, <del>255-157-5A</del> 153-155.5 ft.		PROJECT DESIGNATION 200-PW-2/200-PW-4 OU - Borehole Soil Sampling			SAF NO. F03-006	AIR QUALITY <input type="checkbox"/>		
ICE CHEST NO. <i>GRP-03-016</i>		FIELD LOGBOOK NO.	COA 119153ES10	METHOD OF SHIPMENT Federal Express				
SHIPPED TO Lionville Laboratory Incorporated		OFFSITE PROPERTY NO. <i>Su PTR 14591</i>			BILL OF LADING/AIR BILL NO. <i>Su PTR 14591</i>			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	Cool 4C					
		TYPE OF CONTAINER	aG					
		NO. OF CONTAINER(S)	1					
		VOLUME	120mL					
	SPECIAL HANDLING AND/OR STORAGE RADIOACTIVE TIE TO: <i>B1B592 MAB 12/16/04</i>	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS					
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME					
B1B5F4	SOIL	12-15-04	0920	✓				
CHAIN OF POSSESSION		SIGN/ PRINT NAMES			SPECIAL INSTRUCTIONS			
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	(1)Chromium Hex - 7196; Oil & Grease - 413.1; NO2/NO3 - 353.2;			
<i>David Tyra</i>		<i>12-15-04</i>	<i>David Tyra</i>	<i>12/15/04</i>				
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
<i>M.G. Bunch</i>		<i>12/16/04</i>	<i>M.G. Bunch</i>	<i>12/16/04</i>				
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
<i>Lee Ex</i>		<i>12-18-04 11:15</i>	<i>Lee Ex</i>	<i>12-18-04 11:15</i>				
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
RELINQUISHED BY/REMOVED FROM		DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME				
LABORATORY SECTION	RECEIVED BY	TITLE			DATE/TIME			
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY			DATE/TIME			

Lionville Laboratory Incorporated  
**SAMPLE RECEIPT CHECKLIST (SRC)**

CLIENT: TNU Hamford

Date: 12-18-04

Purchase Order / Project# / SAF# / SOW# / Release #: F03-006

LvLI Batch #: 0412L478

Sample Custodian: *[Signature]*

NOTE: EXPLAIN ALL DISCREPANCIES

- |   |   |  |
|---|---|--|
| 1. Samples Hand Delivered or <u>Shipped</u>   | Carrier <i>bled Ex</i>  | Airbill# 7903 682 1101                               |
| 2. Custody seals on coolers or shipping container intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals    Comments        |
| 3. Outside of coolers or shipping containers are free from damage?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 5. Samples received <u>cooled</u> or ambient?   | Temp 3.7 °C   | Cooler # GRPO3-015                                   |
| 6. Custody seals on sample containers intact, signed and dated?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> No Seals                    |
| 7. coc signed and dated?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 8. Sample containers are intact?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 9. All samples on coc received? All samples received on coc?  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 10. All sample label information matches coc?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 11. Samples properly preserved?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 12. Samples received within hold times? Short holds taken to wet lab?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 13. VOA, TOC, TOX free of headspace?  | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> N/A              |
| 14. QC stickers placed on bottles designated by client?   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No | <input type="checkbox"/> N/A                         |
| 15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles not within policy. See reverse side for policy)     | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |  |
| 16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)                             | <input type="checkbox"/> Yes <input type="checkbox"/> No            | <input checked="" type="checkbox"/> No Discrepancies |